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Amendments to the Claims:

This listing of claims will replace all prior versions and listings of claims.

1. (Canceled)

2. (Currently Amended) A method for the linearization of frequency-modulated continuous wave (FMCW) radar devices having a non-linear, ramp shaped, modulated transmitter frequency progression  $x(t)$  comprising the steps of:

correcting a phase term on a receiver side of a FMCW radar device said correction for compensating a phase error in a reception signal  $q(t)$ ;

~~The method as in claim 1, wherein said step for correcting a phase term comprises~~ which further comprises the following steps:

selecting a number (L) of consecutive ramp-shaped reception sequences  $q_k(n)$  of the reception signal, wherein said number ~~can be~~ is predetermined with  $k=1, \dots, L$ ;

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representing a set of phases  $\arg\{q_k(n)\}$  which ~~can be~~  
are represented as a polynomial of an  $N^{\text{th}}$  order for a time  
index  $n$ , with a polynomial coefficient  $m_l$ , with  $l=1, \dots, N$ ;

transforming a spectrum range  $Q(e^{j\omega})$  of the selected  
reception sequences  $q(n)$  into a basic band that ~~can be~~ are  
predetermined, wherein a set of basic band reception  
sequences  $\hat{q}_k(n)$  with  $k=0, \dots, L-1$  are generated in each  
instance;

iteratively calculating a correction phase term for  
partial compensation of non-linear frequency components in  
said basic band of reception sequences  $\hat{q}_k(n)$  by calculating a  
set of polynomial coefficients  $\tilde{m}_{l,k}^{(i)}$  of the individual basic  
band reception sequences  $\hat{q}_k(n)$  via estimation methods,  
wherein  $\hat{q}_k(n)$  are the sequences that have already been  
iteratively phase corrected, wherein said iteration is  
stopped once a parameter change between two consecutive  
iterations, which ~~can be~~ are predetermined, remains below a  
threshold  $\varepsilon$  which ~~can be~~ is predetermined.

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3. (Currently Amended) The method as in claim 2, wherein said step of calculating polynomial coefficients, includes using said ~~formula~~ coefficients  $\tilde{m}_{i,k}^{(i)}$  which includes estimating a distance  $\tilde{R}_k^{(i)}$  between a radar device emitting a transmission signal  $x(t)$  and an object reflecting a transmission signal  $x(t)$ .

4. (Currently Amended) The method as in claim 2, wherein said step of iteratively calculating a correlation phase term comprises the steps of:

calculating an individual discrete Fourier transformation  $\hat{Q}_k^{(i)}(\mu)$  of the basic band reception sequences  $\hat{q}_k^{(i)}(n)$  whereby  $\hat{Q}_k^{(i)}(\mu) = FFT\{\hat{q}_k^{(i)}(n)\}$  for  $k=1, \dots, L$

calculating filtered basic band reception sequences  $\bar{q}_k^{(i)}(\mu)$  by means of a band pass filter according to  $\bar{Q}_k^{(i)}(\mu) = w(\mu)\hat{Q}_k^{(i)}(\mu)$  wherein  $w(\mu)$  is a spectrum window that ~~can~~ be is predetermined and indicates a range of a spectrum window having a  $\mu_{max}$  that ~~can be is~~ is predetermined wherein

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$\mu \in [\mu_u, \mu_l]$  with a low limit  $\mu_u$  that ~~can be~~ is predetermined

and an upper limit  $\mu_l$  that ~~can be~~ is predetermined;

calculating an individual inverse Fourier transformation  $\bar{q}_k^{(i)}(n)$  of a filtered basic band reception sequence  $\bar{Q}_k^{(i)}(\mu)$  wherein  $\bar{q}_k^{(i)}n = \text{IFFT}\{\bar{Q}_k^{(i)}(\mu)\}$  for  $k=1, \dots, L$ ;

estimating at least one distance  $\bar{R}_k^{(i)}$  by means of a maximum likelihood estimation method;

calculating a polynomial coefficient  $\tilde{m}_{i,k}^{(i)}$  from the estimated distances  $\bar{R}_k^{(i)}$ ;

averaging of said polynomial coefficient  $\tilde{m}_{i,k}^{(i)}$  with  $\ell=1, \dots, N$  over  $L$  reception sequences  $\hat{q}_k$  with  $k=1, \dots, L$ ;

averaging a set of distances  $\bar{R}_k^{(i)}$  over  $L$  reception sequences  $\hat{q}_k(n)$ ;

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calculating the reception sequences  $\hat{q}_k^{(i+1)}(n)$  with the averaged, estimated polynomial coefficients  $\tilde{m}_i^{(i)}$  as the starting point for the next iteration.

5. (Currently Amended) The method as in claim ~~1~~ 2, wherein said iteration step is stopped upon reaching a predetermined number of iteration steps.

6. (Currently Amended) The method as in claim 4, wherein said iteration step is stopped if a condition  $|R^{(i-1)} - R^{(i)}| < \varepsilon$  is reached with  $\varepsilon$  being a threshold that ~~is~~ can be predetermined.

7. (Previously Presented) The method as in claim 6, further comprising the step of calculating a set of final estimate values  $\tilde{R}, \tilde{m}_i$  via the following formula

$$\tilde{R} = R^{(i)}; \tilde{m}_i = \frac{1}{\tilde{R}^{(i)}} \sum_{i=1}^I \tilde{R}^{(i)} \tilde{m}_i^{(i)}.$$

8. (Currently Amended) The method as in claim ~~5~~ 4, wherein said spectrum window is a rectangular window or a Hamming window.

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9. (Previously Presented) The method as in claim 5, wherein a position of a center point  $\mu_{\max}$  of a spectrum window corresponds to a maximum amount of FFT  $|\hat{Q}_k^{(i)}(\mu)|$  generated by averaging of an amount FFT of a basic band reception sequence  $|\hat{Q}^{(i)}(\mu_{\max})|$  over a number L.

10. (Currently Amended) The method as in claim ~~±~~ 2, wherein said reception signal is mixed with said transmission frequency into a lower frequency position that ~~can be~~ is predetermined.

11. (Currently Amended) The method as in claim ~~±~~ 4, wherein after said step of basic band transformation, the method further comprises the step of reducing a scanning cycle  $T_A$  of a ramp signal  $q_k(n)$ , wherein the ramp signals  $q_k(n)$  are filtered by means of an Antialias low-pass.

12. (Currently Amended) The method as in claim 11, wherein ~~said factor K, reduced by~~ scanning cycle  $T_A$ , is reduced by a factor K which lies between K=30 and K=60.

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13. (Original) The method as in claim 5, wherein said number of predetermined iterations ~~can be predetermined~~, is between 10 and 20 iterations.